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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/577,145

04/26/2006

Youngchul Park

33082M322

1198

441 7590 07/22/2009

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EXAMINER

GRAMAGLIA, MAUREEN

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

07/22/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/577,145	<b>Applicant(s)</b> PARK ET AL.	
	<b>Examiner</b> Maureen Gramaglia	<b>Art Unit</b> 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-19 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

2. In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-11, drawn to a thermal processing apparatus.

Group II, claim(s) 12, drawn to a thermal processing method.

Group III, claim(s) 13-19, drawn to a thermal processing control program.

3. The inventions listed as Groups I, II, and III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the shared technical features between Groups I, II, and III, specifically the details of the thermal processing apparatus and a method of controlling it, are known in the prior art, and therefore do not constitute a special technical feature. U.S. Patent Application Publication 2002/0045146 teaches a thermal processing apparatus comprising: a processing container 2, a plurality of heaters 31-35, a plurality of temperature sensors Sin1-Sin5 for respectively detecting temperatures at a plurality of predetermined positions in the processing container, a storing part that stores: a thermal model for forecasting a temperature of the object W to be processed contained in the container from outputs of the plurality of temperature sensors, and a recipe in which a desired temperature of the object to be processed is defined, and a controlling part that forecasts a temperature of the object to be processed by using the outputs of the plurality of temperature sensors and the thermal model, and that controls the plurality of heaters 31-35 so as to cause the forecasted temperature of the object to coincide with the desired temperature defined in the recipe, wherein the thermal model is configured to additionally forecast a temperature of at least one other predetermined portion in the processing container (the temperature of the temperature sensors Sin1 to Sin5 arranged on an inner pipe 2a of a reaction pipe), a desired temperature of the predetermined portion is also defined in the recipe, and the controlling part is adapted to forecast a temperature of the object and a temperature of the predetermined portion by using outputs of the plurality of temperature sensors and the thermal model, and to control the plurality of heaters so as to cause the forecasted temperature of the object

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and the forecasted temperature of the predetermined portion to respectively coincide with the respective desired temperatures. (See at least Figure 2; Abstract; Paragraphs 37-49 and 63-76)

4. This application contains claims directed to more than one species of the generic invention of Group I. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

5. The species are as follows:

Species A, wherein the controlling part forecasts a temperature of the object to be processed during a thermal process.

Species B, wherein the apparatus further comprises a loading/unloading unit, and the controlling part forecasts a temperature of the object to be processed during a loading/unloading process.

6. Applicant is required, in reply to this action, if Group I is elected, to further elect a single species to which the claims shall be restricted if no generic claim is finally held to be allowable. The reply must also identify the claims readable on the elected species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered non-responsive unless accompanied by an election.

7. Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

8. The claims are deemed to correspond to the species listed above in the following manner:

Claim 9 corresponds to Species A.  
Claims 10 and 11 correspond to Species B.

The following claim(s) are generic: 1-8.

9. The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the following reasons: the shared technical features of the claims, i.e. the features of the processing apparatus of Claim 1, are known in the prior art as discussed above, and therefore do not constitute a shared special technical feature.

10. A telephone call was made to Michael Makuch on 13 July 2009 to request an oral election to the above restriction requirement, but did not result in an election being made.

11. Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement may be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

12. The election of an invention or species may be made with or without traverse. To preserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

13. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

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**14. It is noted that Claims 16 and 17 do not appear to be statutory subject matter, since the computer programs of Claims 16 and 17 are not physically embodied on a computer readable medium. See MPEP 2106.01. Applicant is urged to amend the claims to clearly recite statutory subject matter in the reply to this office action, in order to expedite prosecution.**

***Conclusion***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maureen Gramaglia whose telephone number is (571)272-1219. The examiner can normally be reached on core hours of 10-5, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Maureen Gramaglia/  
Examiner, Art Unit 1792

/Parviz Hassanzadeh/  
Supervisory Patent Examiner, Art Unit 1792